Amendments to the Claims:

This listing of the claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently amended) A method for modulating the proliferation or differentiation of a mammalian stem cell or progenitor cell comprising ~~differentiating~~ contacting said ~~stem cell or progenitor~~ cell under suitable conditions ~~and in the presence of~~ with a compound that inhibits phosphodiesterase IV (PDE IV) ~~PDE IV~~ activity, for a sufficient time such that differentiation of the stem cell or progenitor cell is modulated, wherein said compound is not a polypeptide, ~~peptide, protein,~~ hormone, cytokine, ~~oligonucleotide,~~ or nucleic acid.

2. (Currently amended) The method of claim 1 wherein said ~~stem~~ cell ~~is differentiated~~ differentiates into a hematopoietic cell.

3. (Currently amended) The method of claim 1 wherein said ~~stem~~ cell is selected from the group consisting of an embryonic stem cell, a placental stem cell, a cord blood stem cell, a peripheral blood stem cell, and a bone marrow stem cell.

4. (Currently amended) The method of claim 1, wherein said PDE IV inhibitor is a ~~SelCID™~~ selective cytokine inhibitory drug or a prodrug thereof.

5. (Currently amended) The method of claim 1 wherein said ~~differentiation~~ contacting is conducted in cell culture.

6. (Currently amended) The method of claim 1, wherein said ~~differentiation~~ contacting is conducted within ~~an individual~~ a subject.

7. (Original) The method of claim 1 wherein said compound is present at a concentration of from about 0.005 μg/ml to about 5 mg/ml.

8. (Currently amended) The method of claim 1 wherein the ~~stem~~ cell is a human stem cell.

9. (Currently amended) ~~A~~ The method of claim 1 ~~for modulating the proliferation or differentiation of a mammalian~~ wherein said mammalian stem cell or progenitor cell is a $CD34^+$ or $CD133^+$ progenitor cell ~~comprising proliferating or differentiating said cell under conditions suitable for proliferation or differentiation and in the presence of a compound that inhibits PDE IV activity, wherein said compound is not a polypeptide, peptide, protein, hormone, cytokine, oligonucleotide, or nucleic acid~~.

10. (Canceled)

11. (Currently amended) The method of claim 9, wherein said stem cell or progenitor ~~cells differentiate~~ cell differentiates into a $CD34^+CD38^-CD33^+$ or $CD34^+CD38^-CD33^-$ ~~cells~~ cell.

~~The method of claim 9, wherein said compound is a SelCID™ or prodrug thereof.~~

12. (Currently amended) The method of claim 9, wherein said ~~proliferation or differentiation~~ contacting is conducted in cell culture.

13. (Currently amended) The method of claim 9, wherein said ~~proliferation or differentiation~~ contacting is conducted within ~~an individual~~ a subject.

14. (Currently amended) The method of claim 13, wherein said ~~progenitor~~ cells are cells that have been transplanted into said ~~individual~~ subject.

15. (Currently amended) The method of claim 9, wherein said compound is present in an amount sufficient to cause a detectable difference in said ~~differentiation or proliferation~~ proliferation or differentiation relative to a control.

16. (Currently amended) The method of claim 9, wherein said $CD34^+$ or $CD133^+$ ~~progenitor~~ cell has been cryopreserved and thawed prior to said ~~differentiating~~ proliferation or differentiation.

17. (Currently amended) A method for expanding a stem or progenitor cell population in a mammalian subject, comprising administering a therapeutically effective amount of $CD34^+$ ~~progenitor~~ cells and a compound that inhibits PDE IV activity to said mammalian subject, wherein said compound is not a polypeptide, peptide, protein, hormone, cytokine, oligonucleotide, or nucleic acid

18. (Currently amended) The method of claim 17 wherein said $CD34^+$ ~~progenitor~~ cells are differentiated in said mammalian subject.

19. (Currently amended) The method of claim 17 wherein said $CD34^+$ ~~progenitor~~ cells are administered to said mammalian subject in a cell preparation that is substantially free of red blood cells.

20. (Currently amended) The method of claim 17 wherein said $CD34^+$ ~~progenitor~~ cells are administered to said mammalian subject in a cell preparation that comprises bone marrow cells, placental cells, or cord blood cells.

21. (Currently amended) The method of claim 17 wherein said $CD34^+$ ~~progenitor~~ cells are administered to said mammalian subject in conjunction with a carrier.

22. (Currently amended) The method of claim 17 wherein said $CD34^+$ ~~progenitor~~ cells are $CD34^+CD38^-CD33^+$ or $CD34^+CD38^-CD33^-$ progenitor cells.

23. (Currently amended) The method of claim 17 wherein said $CD34^+$ ~~cell is~~ cells comprise a $CD34^+CD133^+$ ~~progenitor~~ cell.

24. (Currently amended) The method of claim 17 wherein the ~~progenitor~~ $CD34^+$ cells express incorporated genetic material of interest.

25. (Currently amended) A pharmaceutical composition comprising a mammalian stem cell or progenitor cell and a pharmaceutically-acceptable carrier, wherein said ~~stem~~ cell has been contacted with a compound that inhibits PDE IV activity for a time sufficient to cause modulation of differentiation or proliferation of said stem cell, and wherein said compound is not a polypeptide, ~~peptide, protein,~~ hormone, cytokine, ~~oligonucleotide,~~ or nucleic acid.

26. (Currently amended) The pharmaceutical composition of claim 25 wherein the ~~stem~~ cell is selected from the group consisting of an embryonic stem cell, a placental stem cell, a cord blood stem cell, a peripheral blood stem cell, and a bone marrow stem cell.

27. (Currently amended) The pharmaceutical composition of claim 25 wherein said compound is a ~~SelCID™~~ selective cytokine inhibitory drug or prodrug thereof.

28. (Currently amended) The pharmaceutical composition of claim 25 wherein said ~~contacting step is conducted~~ cell is contacted with said compound in cell culture.

29. (Currently amended) The pharmaceutical composition of claim 25 wherein ~~the concentration of~~ said compound is present at a concentration of from about 0.005 mg/ml to about 5 mg/ml when contacted with said cell.

30. (Currently amended) The pharmaceutical composition of claim 25 wherein the ~~stem~~ cell is a human stem cell.

31. (Original) The pharmaceutical composition of claim 25 wherein the differentiation is differentiation into a hematopoietic cell.

32. (Currently amended) The pharmaceutical composition of claim [[25]] 31 wherein said hematopoietic cell is a $CD34^+$ or $CD38^+$ hematopoietic cell.

33. (Currently amended) The pharmaceutical composition of claim [[25]] 31 wherein the hematopoietic cell is a CD11b+ cell.

34. (Currently amended) A pharmaceutical composition comprising isolated cord blood cells and an isolated population of white blood cells, wherein the white blood cells are generated by a method comprising differentiating stem cells or progenitor cells under suitable conditions and in the presence of a compound that inhibits PDE IV activity, with the proviso that the compound is not a polypeptide, ~~peptide, protein,~~ hormone, cytokine, ~~oligonucleotide,~~ or nucleic acid, and isolating the white blood cells differentiated thereby.

35. (Original) The pharmaceutical composition of claim 34 wherein the compound is an imide or amide.

36. (Currently amended) The pharmaceutical composition of claim 34 wherein ~~the~~ said differentiating ~~step~~ is conducted in cell culture.

37. (Currently amended) The pharmaceutical composition of claim 34 wherein ~~the concentration of the~~ said compound is present at a concentration of from about 0.005 μg/ml to about 5 mg/ml.

38. (Currently amended) The pharmaceutical composition of claim 34 wherein the stem ~~cell is~~ cells are [[a]] human stem ~~cell~~ cells.

39. (Currently amended) The pharmaceutical composition of claim 34 wherein the stem ~~cell is~~ cells are [[a]] progenitor ~~cell~~ cells.

40. (Currently amended) The pharmaceutical composition of claim 39 wherein the progenitor ~~cell is~~ cells are committed to a specific cell lineage.

41. (Currently amended) The pharmaceutical composition of claim 39 wherein the progenitor ~~cell is a~~ cells are hematopoietic progenitor ~~cell~~ cells.

42. (Currently amended) A pharmaceutical composition comprising a cultured $CD34^+$ or $CD133^+$ ~~progenitor cells~~ cell and a pharmaceutically-acceptable carrier, wherein said ~~progenitor cells have~~ cell has been contacted within the first six days of culture with a compound that inhibits the activity of PDE IV, under conditions that promote proliferation and differentiation of said ~~progenitor cells~~ cell.

43. (Currently amended) The pharmaceutical composition of claim 42 wherein said ~~progenitor cells are~~ cell is collected and cryopreserved after six days of culture.

44. (Currently amended) The pharmaceutical composition of claim 42 wherein said ~~progenitor cells are~~ cell is a $CD34^+CD38^-CD34^-$ or $CD34^+CD38^-CD34^+$ ~~cells~~ cell.

45. (Currently amended) The pharmaceutical composition of claim 42 in which said compound is a ~~SelCID™~~ selective cytokine inhibitory drug or prodrug thereof.

46. (Currently amended) A method of transplanting a mammalian stem cell comprising:

(a) contacting said stem cell or progenitor cell with a PDE IV-inhibitory compound to produce a treated ~~stem~~ cell, wherein said contacting is sufficient to modulate the differentiation of said stem cell; and

(b) administering said treated ~~stem~~ cell to an individual.

47. (Currently amended) The method of claim 46, wherein step (b) comprises administering said treated ~~stem~~ cell in combination with untreated cells.

48. (Currently amended) The method of claim [[46]] 47 wherein the untreated cell is ~~selected from the group consisting of~~ an embryonic stem cell, a placental cell, a cord blood cell, a peripheral blood cell, ~~and~~ or a bone marrow cell.

49. (Currently amended) The method of claim 46, wherein said ~~stem~~ cell has been cryopreserved and thawed prior to said administering.

50. (Currently amended) A method of transplanting a mammalian stem cell or progenitor cell comprising:

(a) contacting said ~~progenitor~~ cell with a PDE VI-inhibitory compound to produce a treated ~~progenitor~~ cell, wherein said contacting is sufficient to modulate the differentiation of said ~~progenitor~~ cell; and

(b) administering said treated ~~progenitor~~ cell to an individual.

51. (Currently amended) The method of claim 50, wherein step (b) comprises administering said treated ~~progenitor~~ cell in combination with untreated cells.

52. (Currently amended) The method of claim [[50]] 51 wherein the untreated cell is ~~selected from the group consisting of~~ an embryonic stem cell, a placental cell, a cord blood cell, a peripheral blood cell, ~~and~~ or a bone marrow cell.

53. (Currently amended) The method of claim 50, wherein said ~~stem~~ cell has been cryopreserved and thawed prior to said administering.

54. (Original) A method of treating an individual experiencing a condition comprising administering to said individual an agent selected from the group consisting of:

(a) a compound that inhibits PDE IV activity, wherein said compound is not a polypeptide, ~~peptide, protein,~~ hormone, cytokine, ~~oligonucleotide,~~ or nucleic acid;

(b) a stem cell differentiated in the presence of said compound; and

(c) a progenitor cell differentiated in the presence of said compound,

wherein said agent detectably reduces or ameliorates said condition.

55. (Original) The method of claim 54, wherein said condition is selected from the group consisting of inflammation, heart disease, vascular disease, amylotrophic lateral sclerosis, a lysosomal storage disease, and diabetes.

56. (Currently amended) The method of claim 54, wherein said agent comprises both a stem cell and compound that inhibits PDE IV activity, wherein said compound is not a polypeptide, ~~peptide, protein,~~ hormone, cytokine, ~~oligonucleotide,~~ or nucleic acid

57. (Currently amended) A method of treating an individual comprising administering a therapeutically effective amount of white blood cells to said recipient mammalian subject, wherein said white blood cells are generated by a method comprising differentiating a stem cell or a progenitor cell under suitable conditions and in the presence of a compound that inhibits PDE IV activity, with the proviso that the compound is not a polypeptide, ~~peptide, protein,~~ hormone, cytokine, ~~oligonucleotide,~~ or nucleic acid.

58. (Currently amended) The method of claim 57 wherein the ~~stem cells are~~ cell is differentiated *in vitro*.

59. (Currently amended) The method of claim 57 wherein the ~~stem cells are~~ cell is differentiated in a postpartum perfused placenta.

60. (Original) The method of claim 57 wherein the white blood cells are administered to the individual in a cell preparation that is substantially free of red blood cells.

61. (Original) The method of claim 57 wherein the white blood cells are administered to the individual in a cell preparation which comprises cord blood cells.

62. (Original) The method of claim 57 wherein the white blood cells are administered to the individual in conjunction with a carrier.

63. (Original) The method of claim 57 wherein the white blood cells are administered to treat or repair a defect in the recipient mammalian subject.

64. (Original) The method of claim 63 wherein the defect is a hematopoietic or blood cell proliferation defect.

65. (Original) The method of claim 63 wherein the hematopoietic or blood cell proliferation defect is neutropenia or leukopenia.

66. (Original) The method of claim 63 wherein the white blood cells are administered systemically.

67. (Original) The method of claim 63 wherein the white blood cells are administered intravenously.

68. (Original) The method of claim 63 wherein the white blood cells express incorporated genetic material of interest.

69. (Original) The method of claim 57 wherein the white blood cells are allogeneic.

70. (Original) The method of claim 57 wherein the recipient mammalian subject is human.

71. (Currently amended) A method of making a pharmaceutical composition, comprising:

(a) contacting a $CD34^+$ or $CD133^+$ ~~progenitor cells~~ cell with a compound that inhibits PDE IV activity, wherein said ~~progenitor cells~~ cell are cultured for six days under culture conditions that allow proliferation and differentiation of said progenitor cells;

(b) collecting said ~~cells~~ cell after six days of culture; and

(c) placing said ~~cells~~ cell in a pharmaceutically-acceptable carrier.

72. (Original) The method of claim 71 wherein said contacting is performed on the first day of culture.

73. (Original) The method of claim 71, wherein said contacting is performed at least twice during said six days of culture.

74. (Currently amended) The method of claim 71, wherein said compound is a ~~SelCID™~~ selective cytokine inhibitory drug or a prodrug thereof.

75. (Currently amended) The method of claim 71, wherein said ~~progenitor cells have~~ cell has been isolated from other blood cells prior to said culturing.

76. (Original) The method of claim 71, wherein said culture medium additionally contains GM-CSF and TNF-α.

77. (Currently amended) The method of claim 74, wherein said ~~SelCID™~~ selective cytokine inhibitory drug or a prodrug thereof is present in a concentration of between 0.1 μM and 10.0 μM.

78. (Currently amended) The method of claim 74 wherein said ~~SelCID™~~ selective cytokine inhibitory drug or a prodrug thereof is present at a concentration of 1.0 μM.

79. (Currently amended) The method of claim 74, wherein said ~~cells are~~ cell is cryopreserved after said collecting.

80. (Original) A pharmaceutical composition made by the process of claim 74.

81. (Currently amended) A method for modulating the differentiation of a $CD34^+$ or $CD133^+$ ~~progenitor~~ cell comprising:

(a) providing ~~a population of said progenitor cells~~ said cell under conditions such that differentiation can occur;

(b) contacting said ~~progenitor cells~~ cell with a compound, wherein said compound is a PDE IV inhibitor; and

(c) differentiating said ~~progenitor cells~~ cell under conditions suitable for differentiation, wherein said compound is placed in contact with said ~~progenitor cells~~ cell for at least part of the time said ~~progenitor cells~~ cell are differentiating.

82. (Original) The method of claim 81, wherein in step (b), said contacting is performed at any time between day 0 to day 6 of culture.

83. (Currently amended) The method of claim 81, wherein in step (b), said contacting is performed at the start of the culture of said ~~progenitor cells~~ cell.

84. (Currently amended) The method of claim 81, wherein in step (b), said contacting is performed after said ~~progenitor cells have~~ cell has proliferated for at least two days.

85. (Currently amended) The method of claim 81, wherein in step (b), said contacting is performed after said ~~progenitor cells have~~ cell has proliferated for at least six days.

86. (Currently amended) The method of claim 81, wherein said ~~progenitor cells are~~ cell is a $CD34^+$ progenitor ~~cells~~ cell.

87. (Currently amended) The method of claim 81, wherein said ~~progenitor cells differentiate~~ cell differentiates into ~~cells~~ a cell exhibiting cell surface marker characteristics selected from the group consisting of:

a decrease in CD11c expression relative to a control;

a decrease in CD38 expression relative to a control;

a decrease in CD80 expression relative to a control;

a decrease in CD86 expression relative to a control;

a decrease in CD1a expression relative to a control;

a decrease in CD14 expression relative to a control;

a decrease in $CD54^{bright}$ expression relative to a control;

a decrease in HLA-DR expression relative to a control;

an increase in CD15 expression relative to a control;

an increase in CD33 expression relative to a control;

an increase in $CD54^{dim}$ expression relative to a control;

an increase in CD133 expression relative to a control; and

a combination of any of the above marker characteristics;

wherein said control is a $CD34^+$ ~~progenitor~~ cell cultured under the same conditions as said ~~progenitor~~ cell in the absence of said compound.

88. (Currently amended) The method of claim 81, wherein said ~~progenitor cells differentiate~~ cell differentiates into a $CD34^+CD38^-CD33^+$ or $CD34^+CD38^-CD33^-$ ~~cells~~ cell.

89. (Currently amended) The method of claim 81, wherein said PDE IV inhibitor is a ~~SelCID™~~ selective cytokine inhibitory drug or prodrug thereof.

90. (Currently amended) A method of producing a differentiated ~~cells~~ cell from a $CD34^+$ ~~progenitor cells~~ cell comprising culturing said ~~cells~~ $CD34^+$ cell in a culture medium

that allows proliferation and differentiation, and contacting said ~~progenitor cells~~ cell with a ~~SelCID™~~ selective cytokine inhibitory drug or prodrug thereof, wherein said culturing produces a differentiated cell.

91. (Original) The method of claim 90, wherein said contacting is performed on the first day of said culturing.

92. (Original) The method of claim 90, wherein said contacting takes place at least twice during the first six days of said culturing.

93. (Original) The method of claim 90, wherein said contacting takes place no earlier than said first day of culturing.

94. (Original) The method of claim 90, wherein said differentiated cell is a dendritic cell, a granulocyte, a $CD34^+CD38^-CD33^+$ or a $CD34^+CD38^-CD33^-$ cell.

95. (Currently amended) The method of claim 90, wherein said $CD34^+$ ~~progenitor~~ cell is a $CD34^+CD133^+$ ~~progenitor~~ cell.

96. (Currently amended) The method of claim 90, wherein said differentiated ~~cells are~~ cell is isolated at day 6 of culture.

97. (Currently amended) The method of claim 90, wherein said differentiated ~~cells are~~ cell is isolated at day 12 of culture.

98. (Currently amended) The method of claim 90, wherein said $CD34^+$ ~~cells have~~ cell has been isolated from other blood cells prior to said culturing.

99. (Original) The method of claim 90, wherein said culture medium additionally contains GM-CSF and TNF-α.

100. (Currently amended) The method of claim 90, wherein said ~~SelCID™~~ selective cytokine inhibitory drug or prodrug thereof is present in a concentration of between 0.1 μM and 10.0 μM.

101. (Currently amended) The method of claim 86 wherein said ~~SelCID™~~ selective cytokine inhibitory drug or prodrug thereof is present at a concentration of 1.0 μM.